# **CHAPTER 5**

# NUCLEAR, BIOLOGICAL, AND CHEMICAL DEFENSE READINESS AND TRAINING

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#### 5.1 INTRODUCTION

For weapons of mass destruction (WMD) to provide a military advantage, they must produce adverse physical or psychological effects and degrade performance of an opponent's force. Performance degradation could be achieved by causing mass casualties, damaging material, or simply forcing personnel into a protective posture which reduces their ability to perform. If these weapons do not ultimately result in mission degradation, an adversary may be deterred from employing WMD. A force trained, equipped, and demonstrating the ability to survive, fight, and win in a battlespace where WMD are used, continues to be a critical element of deterrence.

The Services have done well in the exercise of their NBC defense responsibilities under Title X of the FY94 Defense Authorization Act. Our vision for Joint NBC Defense Management follows: America's Armed Forces trained and ready for the 21st Century, protecting our nation and its forces against nuclear, biological and chemical threats. We will build on the Service successes to develop a viable Joint orientation to NBC defense capabilities which includes Joint requirements documents; Joint doctrine and tactics, techniques, and procedures; Joint modeling, simulation and wargaming; and Joint professional training. The counterproliferation acquisition initiative has provided funding necessary to begin this process under the new management of the Joint Services Integration Group (JSIG) discussed in Chapter 1.

#### 5.2 JOINT NBC DEFENSE DOCTRINE

The scope of Joint Pub 3-11, *Joint Doctrine for Nuclear, Biological, and Chemical (NBC) Defense*, includes providing guidelines for the planning and execution of NBC operations. Its focus is on the NBC threat; national policy; and considerations peculiar to the preparation and conduct of NBC defense. These considerations include principles of theater NBC defense, logistics support, medical support, training, and readiness. Although NBC defense doctrine is briefly addressed in 29 other joint doctrine publications further development may be required, particularly in the area of joint tactics, techniques, and procedures. In the meantime, Joint Pub 3-11, in conjunction with CJCS CONPLAN 0400-96, provides a foundation for combatant commands to train and evaluate their forces.

#### 5.2.1 Joint NBC Defense Doctrine Program Management

The NBC defense program management strategy described in Chapter 1 provides the mechanism to provide assistance to the Joint Staff in the further development of Joint NBC defense doctrine program. The Joint Service Integration Group (JSIG) has begun coordinating with the Services to ensure the program is realistic and meets the needs of the Joint community.

#### 5.2.2 Joint NBC Defense Doctrine Development Program

The FY95 effort consisted of several initiatives to analyze and develop a requirements list for NBC defense doctrine programs that will be used to develop a strategy for recommending changes to the next generation of Joint NBC defense doctrine. Work began on a

multi-year NBC Defense Joint Doctrine Development Action Plan (JDDAP) that will serve as a road map for these recommended changes. The draft doctrine emerging from this process will be validated using simulations and then used to recommend a revision of Joint Pub 3-11, where appropriate.

During FY96, manning of a five member U. S. Army Chemical School (USACMLS) Joint Doctrine Cell was completed. This cell, however, was not manned until September because of the prolonged civilian hiring procedure. Also in FY96, a contract was awarded to perform the Service doctrine and open publication literature search, and to develop a data base and library to be used in preparing the JDDAP. This effort will identify existing doctrine, tactics, techniques and procedures used by the Services; correlate areas of commonality; identify voids; and ultimately prepare the road map (JDDAP) for joint doctrine efforts. Reference material has been delivered to the USACMLS. An In-process Program Review (IPR) is to be scheduled at which time initial recommendations for the JDDAP will be presented to the USACMLS. Coordination with other Services is to be scheduled. The FY96 effort was hampered by late funding (received in March 95) and lack of personnel.

#### 5.2.3 Army Medical Doctrine Development Program

The FY96 effort consisted of several initiatives to update AMEDD NBC defense doctrine products and develop coalition medical NBC procedures. Two AMEDD doctrine field manuals were updated. They were FM 8-9 (NATO Handbook on the Medical Aspects of NBC Defensive Operations AMedP-6(B)) and FM 8-285 (Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries). FM 8-9 and FM 8-285 are multi-service publications.

The AMEDD participated in numerous NATO medical NBC procedural products development resulting in several NATO Standardization Agreements (STANAGs). Further, the AMEDD participated in Quadripartite Working Group to develop additional medical NBC procedural product agreements (QSTAGs). STANAGs and QSTAGs are reviewed for integration of these agreements into Army-specific doctrine literature publications.

A new AMEDD doctrine literature publication provides medical management and treatment procedures for biological warfare agents is in the early planning stage. This manual will most likely become a multi-service publication.

#### 5.3 STANDARDS/PROFICIENCY AND CURRENCY

Each service establishes standards of proficiency and currency for NBC defense training. The U.S. Army Chemical School (USACMLS) as the DoD Executive Agent for joint NBC defense training, has initiated several actions to counter NBC threats. These include (1) assisting CINCs, MACOMS and their staffs assessing and providing reference materials regarding the NBC threat and recommend actions to reduce the NBC threat in their areas of operations; (2) providing broad-based joint NBC defense doctrine and joint doctrine development support; (3) introducing and upgrading instructional aids and training support

material for war colleges and command and staff colleges for all services; and (4) developing, evaluating, and fielding advanced distributed instructional capabilities for both resident and nonresident instruction.

#### 5.3.1 **Army**

Army Regulation 350-41, *Training and Units*, establishes Army standards for proficiency for NBC defense training. NBC defense training is conducted at schools and in units.

#### **Individual Training**

At the initial training level, NBC defense tasks are taught to students wearing Mission Oriented Protective Posture (MOPP) gear during Basic Soldier Training and Warrant Officer Candidate Training to satisfy Military Qualifications Standards Level I. Qualification Standards Level II is achieved from NBC tasks training conducted during Officer (basic and advanced) and Warrant Officer (basic) training. NCOs train on leader NBC skills during Primary Leadership Development Courses (PLDC). Other Officer and NCO courses require training in NBC effects on AirLand operations. At the company level each unit has an NBC NCO specialist and at the battalion or higher level each unit has an NBC Officer and Senior NCO.

# **Unit Training**

The Army is constantly challenged to improve its training of NBC battlefield hazards by integrating such training into unit mission training as well as individual and leader training. It is required that the NBC protective mask be worn during weapons qualification training up to twice a year, depending on the unit category within the Standards in Training Commission (STRAC). Additionally, essential Army civilians are trained in NBC survival skills. Because of today's battlefield complexities, the Army takes a systems approach to its training. NBC tasks for individuals are published in Soldiers' Training Publications and trained in the Army School System. Sustainment training occurs in the unit. NBC collective tasks are published in ARTEP Mission Training Plans. The highest level of NBC training recognizes NBC as a battlefield condition and units train to execute their mission-essential task list (METL) while under NBC conditions.

# **Mobilization Training**

Fort McClellan is a major Reserve Component mobilization center for chemical units. As part of the mobilization process, these units receive individual and unit NBC defense refresher training. During Desert Shield/Storm, instructor personnel from the U.S. Army Chemical School trained numerous units to ensure currency in NBC tasks prior to deployment.

#### **Medical Training**

The U.S. Army Medical Department Center and School (AMEDDC&S) conducts Medical NBC Defense Professional Training at Fort Sam Houston, Texas consisting of four

Soldier/Noncommissioned Officer (NCO) courses, two Officer courses and various related professional short courses.

AMEDD sergeants attend a 17 week Basic NCO Course (BNCOC) where NCOs with the MOS 91B (combat medic) are trained to be medical platoon treatment/evacuation team leaders. AMEDD BNCOC provides the NCO with the technical and tactical skills to conduct medical operations in a NBC environment, to manage and treat contaminated casualties, and to train non-medical soldiers in casualty decontamination procedures. In FY96, more than 350 junior NCOs were trained in this course.

All AMEDD officers begin training in the Officer Basic Course (OBC). This 11 week course prepares them with the fundamental knowledge to conduct medical operations in an NBC environment and to advise company, battalion, and medical treatment facility commanders in NBC contamination avoidance and the medical implication of NBC exposures. This experience includes a mixture of classroom instruction, field training exercises and confidence building, hands-on equipment training. There are six courses for active Army components and five courses for Reserve/National Guard components annually. In FY96, over 1,800 officers were trained in these courses.

The AMEDD Officer Advance Course (OAC) is designed to provide advanced military education for officers with 3–9 years of time in service. This 19 week course provides the AMEDD officer for command, leadership, and staff positions of greater responsibility in both peacetime and times of hostility. Medical NBC training emphasis is placed on supervision of medical operations in NBC contaminated environments with a capstone, Corps level, field training exercise, Medical Unit Staffs in Operations. Due to restructuring of this course for FY97, there was only one course offered to each of the active Army and Reserve/National Guard component. In FY96, more than 700 company grade officers were trained in these courses.

The Medical Management of Biological and Chemically Contaminated Casualties (M2BC3) Course provides DoD personnel, primarily physicians and nurses, with a working knowledge of the potential threat of chemical and biological weapons and the status and scope of medical defense strategies. It combines classroom instruction and a field experience to establish essential skills, install confidence and define limitations in therapeutic modalities with each type of medical setting. The course also instructs on the use of specialized equipment and skills required for safe, long-distance evacuation. First-hand experience in triage, decontamination and medical operations on the integrated battlefield is stressed. This course is offered four times annually at the U.S. Army Medical Research Institute for Chemical Defense (MRICD), Aberdeen Proving Grounds, Maryland and the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), Ft. Detrick, Maryland. along with a shorter "road" course provided on-site for individual units or posts. Additionally, M2BC3 was presented to the Medical Corps specific OBC class as part of their initial training to the AMEDD. In FY96, there were 793 Army, 168 Navy, 30 Air Force, 156 DoD Civilians/National Guard/Reserve, and 650 Civilians (Atlanta fire, police, and EMT) personnel trained in this course, for a total of 1,797 personnel. A broadcast course presenting the Medical Management of Biological Casualties is

being prepared and will be presented via video teleconference to multiple sites beginning September 1997.

Specific nuclear training is addressed through the Medical Effects of Nuclear Weapons (MENW) course. This one week course is designed to provide military health care providers and operational planners with background material relating to human injury and combat effectiveness in a nuclear weapons detonation or accident scenario. The course introduces the physical principles of nuclear weapons and ionizing radiation effects and investigates the medical problems associated with radiation, including external exposure and internal contamination. This course is offered twice annually at the Armed Forces Radiology Research Institute (AFRRI), Bethesda, Maryland along with shorter "road" courses provided on-site for individual units or posts. MENW was also presented to the Medical Corps specific OBC class as part of their initial training to the AMEDD. In FY96, there were 433 Army, 122 Navy, 165 Air Force, and 9 DoD Civilians personnel trained in this course, for a total of 729 personnel.

The Medical NBC Professional Filler (PROFIS) Course is a two week, Joint Service, course for the Medical NBC Officer (Nuclear Medical Science Officer or Preventive Medicine Officer) which stresses advanced instruction on the medical implications of NBC and directed energy environments. Topics range from the medical threat of NBC to the structure of the Wartime AMEDD and are presented by subject matter experts from various DoD and Civilian agencies, such as the USACMLS, AFRRI, Defense Intelligence Agency, and Scientific Ecology Group, Inc. Emphasis is placed on contingency operations, lessons learned from previous deployments, and responsibilities of PROFIS Officers to their wartime units. In addition, each officer receives a "Battle Chest". This chest contains a notebook computer with modem, color printer, and digital references. The Battle Chest gives each officer the ability to perform their medical NBC duties in any deployable region.

Shortfalls in medical NBC simulations were addressed in FY96. There were two extensive initiatives started to train AMEDD officers in medical NBC, logistical, and operational knowledge. In the stand alone simulation, each officer will be placed in a virtual scenario in which they need to react in "real-time" to the operational tempo of the ongoing virtual battle. The long term goal of this simulation endeavor is to be incorporated, whether conceptually or entirely, into the WARSIM 2000 effort. Additionally, enhancements started with existing simulations stressing the management of NBC contaminated casualties with an Observer/Controller on site to evaluate the thoroughness of decontamination procedures.

A new initiative, Medical NBC Defense Training and Education Network, established a method to provide distributed learning and digital references via the Internet to improve the overall awareness of medical NBC issues and to enhance sustainment, training capabilities. The "home page" [http://www.nbc-med.org/] provides doctrinal publications that are interconnected by keywords to allow for quick searches of topics. For training purposes, the user can download these documents. In addition to the internal search capability, this site has a state of the art, Internet search engine which allows the user to explore all electronic information in support of medical or NBC training. Training using multimedia technology is also being developed for use with this network. Currently, a Management of Chemical Warfare Injuries

interactive training package and Medical Management of Biological Casualties Manual is accessible through the site with nuclear training to be added as they become available. Future improvements to this network include: expanding connectivity to other military, governmental and private agencies; scheduling interactive training and education events; and adding related video, video conferences and training seminars to enhance training.

# 5.3.2 Air Force

Air Force policy is to train and equip only personnel in or deployable to NBC threat areas. The Air Force standards of proficiency are based on two international standardization agreements: NATO Standardization Agreement 2150 (NATO Standards of Proficiency for NBC Defense), and Air Standardization Coordinating Committee (ASCC) Air Standard 84/8 (Initial, Continuation and Unit NBC Standards). Both agreements are implemented through Air Force Instruction 32-4001, Disaster Preparedness Planning and Operations. The Air Force ensures proficiencies and currency of NBC warfare defense training through classroom training, unit level training, and exercises. NBC Defense Training (NBCDT) is required only for military personnel and emergency essential civilians in or deployable to areas where the use of biological or chemical weapons are threatened. Major Commands (MAJCOMs), the Air Reserve Component, and Direct Reporting Units may tailor their NBCDT programs to meet their specific mission requirements. The subjects presented in the classroom follow the three principles of NBC defense (avoidance, protection and decontamination) as identified in Joint Doctrine. The classroom training is followed by unit level training on wartime mission critical tasks. Supervisors train personnel to complete mission critical tasks while the workers are wearing their full complement of individual protective equipment. Exercises are used for training and evaluation purposes. Instructors at unit level receive their professional training through Air Force courses at Ft. McClellan. Alabama.

#### **Individual Training**

There are two types of individual training. The first is *general equipment and* procedures training that enables personnel to recognize and protect themselves and others from NBC hazards. The second is *individual proficiency training* that enables personnel to perform their wartime tasks in a NBC contaminated environment. Detailed training comes with assignment to a threat area or to a deployable unit. Personnel receive six hours of initial equipment and procedures training to include mask confidence training within 30 days after arrival in a threat area or 90 days after assignment to a mobility position. NBC refresher training is at the discretion of the major commands, with the majority opting for annual refresher training through classroom training and exercise participation. Individual NBC proficiency training occurs through on-the-job-training and exercise participation.

#### **Unit Training**

Units in or deployable to threat areas must conduct at least two attack response exercises per year; overseas units often conduct graded attack response exercises more frequently. Air Force major commands have reported significant increases over the last three

years in the number of people receiving equipment and procedures training as well as the number of hours spent for that training. The Air Force requires installations to conduct graded attack response exercises, consistent with the threat, at least:

- twice annually at installations in NBC threat areas
- once annually at installations in NBC non-threat areas
- An additional exercise for units with a mobility commitment based on the threat within the deployment area.

#### 5.3.3 **Navy**

The Navy's standards of proficiency are contained in several publications:

NWP 62.1	Surface Ship Survivability (Series)
NSTM 470	Shipboard BW/CW Defense
NSTM 070	Radiological Recovery of Ships After Nuclear Weapons Explosion
NSTM 077	Personnel Protection Equipment
FXP-4	Mobility, Logistics, Fleet Support Operations, Non-Combat Operations
	and Explosive Ordinance Disposal Exercises
S 5080	US Navy Chemical/Biological Defense AA-HBK-010 Handbook

# Individual Training

The Navy provides initial entry level CBR defense training to all officers and enlisted personnel in the accession programs. Enlisted personnel receive three hours of training (2 hours in the classroom; 1 hour in the lab) focused on the use of personal protection equipment and survival skills, including a CBR-D "confidence" chamber exposure. Officers receive two hours of class time focused on personal protection equipment and survival skills.

# **Unit Training**

Proficiency training is conducted at the unit level by Navy instructors who are graduates of the NBC Defense course conducted by the Navy at Fort McClellan, Alabama. Navy units receive formal training prior to and during deployment. In addition to training, graded exercises are conducted semi-annually.

# **5.3.4** Marine Corps

The Marine Corps' NBC training focuses on the ability to conduct operation throughout the battlespace with particular emphasis on amphibious deployment, littoral, and air/ground operations. The Marine Corps views NBC as an environment, similar to daylight/darkness, cold/heat.

Training requirements are derived from the Force Commander's Mission Essential Task Lists, Joint Universal Lessons Learned, Marine Corps Lessons Learned, Mission Need

Statements and Fleet Operational Needs Statements. Once validated, the training requirements are introduced into the Systems Approach to Training (SAT) Process.

One of the results of the SAT process is the development of Training Tasks and Standards that will fulfill the training requirements. These tasks lists and standards are incorporated into Individual Training Standards (ITSs) for individual Marines and Mission Performance Standards (MPS) for Marine units. These ITSs and MPSs are published as Marine Corps Orders for standardization and compliance throughout the Marine Corps.

The Marine Corps breaks training down into two categories: Individual Training based on ITSs and Collective (unit) Training based on MPS. Figure 5-1 shows the individual NBC training provided to all Marines both enlisted and officers.

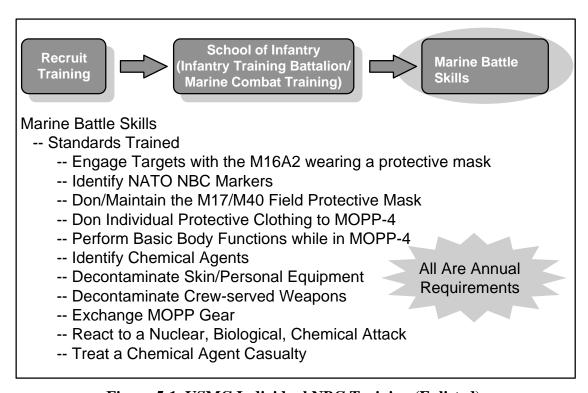


Figure 5-1. USMC Individual NBC Training (Enlisted)

#### **Individual Training**

Enlisted entry level training begins at recruit training or "Boot Camp" where marines are introduced to the field protective mask and the gas chamber. All enlisted marines then proceed to the School of Infantry (SOI). NBC training is identical for all personnel. The training focus is surviving under NBC conditions. Training is currently transitioning from a classroom/academic environment to practical application/field environment to provide students more hands on experience.

Once Marines reach their units they begin the Marine Battle Skills program. Marine Battle Skills is a set of tasks which all Marines are required to be proficient in and are evaluated

on annually. Marine Battle Skills NBC training focuses on providing marines the capability to survive as well as function under NBC conditions.

## **Unit Training**

Unit level (or collective) training includes classroom and field training and is included in unit training exercises and plans. (See figure 5-2.) Just as individuals are required to meet ITSs, units are also required to meet very specific training standards. These requirements take the form of Mission Performance Standards (MPSs). Each type of unit in the Marine Corps has a set of MPS assigned to it. These MPSs are published as 3500 Series Marine Corps Orders.

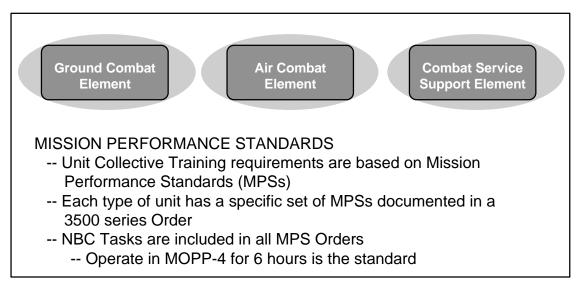


Figure 5-2. USMC Collective Training, NBC Requirements

Each MPS Order includes NBC Tasks which the unit must accomplish. However, each set of requirements varies from unit to unit. For example, a Tank Battalion must be able to utilize the vehicle's NBC filtration system, decontaminate tanks, and operate tanks under NBC conditions. An Infantry Battalion on the other hand has no requirement to decontaminate tanks, but does have to decontaminate crew served weapons. Unit NBC defense training is overseen by unit NBC specialists who are graduates of the Army's Chemical Defense Training Facility at Ft. McClellan, Alabama. (See figure 5-3.) NBC evaluations are conducted annually for all Marine Corps units. Those units that are part of the Marine Corps' Unit Deployment Program and designated Marine Expeditionary Units are required to undergo an NBC evaluation prior to deployment.

#### 5.4 NBC DEFENSE PROFESSIONAL TRAINING

Public Law 103-160 requires all Services to conduct NBC defense professional training at the same location. Currently, training is located at the U.S. Army Chemical School, Fort McClellan, Alabama. Each Service conducts their training with their own Service instructors. The experts who graduate from the Service's technical training and the Army's Chemical Defense Training Facility become instructors for their Service's unit training.

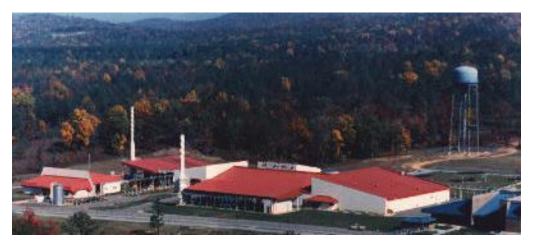


Figure 5-3. Chemical Defense Training Facility, Fort McClellan, Alabama

#### **5.4.1 Joint NBC Defense Professional Training**

The U.S. Army Chemical School has established a Joint Training Steering Group (JTSG) as a forum to discuss issues that pertain to facilities and range scheduling and any other training issues that impact the ability of the Services to conduct effective training.

Plans are being made to exchange information on Service equipment, doctrine and employment techniques to establish a baseline for development of future Joint doctrine and professional training. The discussion concerning a Joint instructor pool is beginning. The concept is to consolidate classes that teach the same task to the Services using a Service instructor that has that skill. Conceivably, a Marine Corps instructor could teach a task to a class containing Army, Navy, Marine Corps, and Air Force students. For example, the Air Force now teaches a four-day block of instruction for the Navy concerning major accident response. This exchange will grow once the JSIG is staffed and funded to coordinate the effort.

Within the joint medical arena, a new course, "The Management of Chemical and Biological Casualties Course", has been established based on guidance contained in DoD Directive 6025.3, Clinical Quality Management Program in the Military Health Services (signed 20 July 1995). This directive requires that health care providers receive certification that documents preparation for assignments during military operations. This includes NBC defense training and provider courses where applicable. Certification will be reviewed by the medical commander annually. In addition, on 20 December 1995 the DoD completed a Directive "Military Medical Readiness Skill Training" (number to be assigned) which implements policy, assigns responsibility, and prescribes procedures for developing and sustaining comprehensive systems for providing, assessing, and monitoring military medical skills training essential for all military personnel, health care personnel, and medical units. NBC defense training, to include chemical and biological warfare defense measures and medical specialty training such as casualty management, are specifically articulated in the instruction.

All medical professional emergency medical preparedness Medical Nuclear Casualty Training has been consolidated under the Armed Forces Radiobiology Research Institute in Bethesda, Maryland, where radiobiology education is made available in a Tri-Service format.

# **5.4.2** Army NBC Defense Professional Training

US Army NBC Defense Professional Training at Fort McClellan, Alabama consists of three enlisted/noncommissioned officer courses and two officer courses. Initial entry enlisted soldiers receive training in agent characteristics and hazards, smoke and decontamination operations, chemical and radiological survey procedures and individual protective clothing and equipment. This one station unit training program provides 18 weeks of intensive training. It culminates with live/toxic agent training in the Chemical Defense Training Facility. Toxic agent training is an integral, mandatory component of all professional courses.

Chemical Corps sergeants attend the 15 week Chemical Basic Noncommissioned Officer Course (BNCOC) where they are trained to be an NBC company squad leader and a non-chemical company or battalion NBC NCO. Chemical BNCOC provides the NCO with the technical and tactical skills needed to advise company/battalion commanders in NBC operations and procedures, to train non-chemical soldiers in NBC avoidance, decontamination and protective measures and to lead smoke/decontamination squads.

Chemical Corps staff sergeants and sergeants first class attend the 13 week Chemical Advanced NCO Course (ANCOC) where they are trained to be an NBC platoon sergeant, an NBC NCO at brigade level, and an NBC NCO in a division or Corps level NBC element. They receive advanced technical operations, hazard estimates, logistics and maintenance management, combined arms operations, smoke and flame support, and training management.

Chemical Corps lieutenants attend a 19 week officer basic course which prepares them to serve either as a Chemical Corps smoke or decontamination platoon leader or as a non-chemical battalion chemical staff officer/assistant operations officer. This course provides them with a fundamental knowledge of NBC agent characteristics and hazards, NBC recon (non-FOX), decon and smoke operations, NBC staff functions, and individual/unit tactical operations. The course is a mixture of classroom instruction, hands-on equipment training, and field exercises. Completion of live/toxic agent training is a prerequisite for graduation.

Chemical Corps captains attend the 20 week officer advanced course where they are trained to serve as the commander of an NBC defense company and as NBC staff officers at the brigade and division level. Instruction focuses on leadership, Army operations, hazard prediction, planning and conducting NBC reconnaissance, decontamination, and smoke and flame operations in support of maneuver units. Additionally, officers receive training in nuclear target analysis/vulnerability analysis, operational radiological safety, and environmental management. Extensive use is made of computer simulations to reinforce the application of NBC assets in support of tactical operations.

Specialized professional training is conducted in stand-alone courses attended by DoD, Allied, and international students. These courses include:

•	NBC Reconnaissance Operations (FOX)	(5 weeks)
•	Radiological Safety (Installation level)	(3 weeks)
•	Chemical Weapons Inspector/Escort (OSIA)	(1 week)
•	Chemical Weapons Convention Module II	(6 weeks)
•	Decon Procedures (Non-US) (GE, UK, NE)	(1 week)
•	RADIAC Calibrator Custodian	(1 week)
•	Biological Detection Specialist	(7 weeks)

# **5.4.3** Air Force NBC Defense Professional Training

The Air Force training detachment at Ft. McClellan offers seven separate in-residence courses designed to enhance the NBC proficiency of primary-duty AF Civil Engineer Readiness Flight personnel. These courses fulfill the differing needs of the total force, including Active Duty, Air National Guard, and Air Force Reserve. Further, the Air Force administers an exportable course designed to prepare people for in-residence training, a career development course taken through correspondence, and two mobile courses in airbase operability and NBC cell operations.

Each course contains a wide range of materials; covering critical aspects of Readiness Flight operations in situations ranging from peacetime, military operations other than war, through wartime. The following is a synopsis of the NBC aspects of these courses.

- Training for personnel being assigned primary readiness duties includes comprehensive coverage of agent characteristics and hazards (to include determination of incapacitation/lethality levels); nuclear weapons effects and other specific hazards associated with ionizing radiation; NBC detection and decontamination; contamination control and avoidance techniques; plotting and reporting procedures; detailed NBC persistency and duration of hazard calculations; the inter-relationship between NBC defense and other passive defense activities (e.g., camouflage, concealment, and deception, (CCD), dispersal, and hardening, etc.); and systematic analysis procedures for assessing the hazard and providing credible advice to commanders.
- Air Force learning theory emphasizes hands-on training and the school makes extensive
  use of available training ranges and equipment. The school includes CDTF live agent
  training in most of their courses. Training is provided on every major piece of equipment
  available in the field today, including state-of-the-art items to be fielded in the near
  future.
- The Readiness Flight Officer and 7-level Craftsman courses provide flight leaders and mid-level NCOs with the background and technical information that is necessary for effective management of the Readiness Flight and contingency response operations.

Readiness is the key to successful Air Force operations. Consequently, the various aspects of Readiness Flight operations, including NBC defense, are also topics of instruction at briefings for Air War College, Air Force Institute of Technology, or Joint Senior Leaders Courses.

## 5.4.4 Navy CBR Defense Professional Training

The Navy Training Center Detachment at Fort McClellan offers two courses of instruction for Navy Chemical, Biological and Radiological Defense (CBR-D) specialists. The courses are open to Navy, Coast Guard, Military Sealift Command and foreign personnel, E-5 and above. Courses are designed to provide both afloat and ashore commands with individuals who can successfully perform their requisite duties in a CBR contaminated environment. In addition, the training enables CBR-D specialists to act as the primary CBR-D trainers for their respective commands.

The training capitalizes on the unique capabilities of the Army Chemical School. In addition to classroom instruction, the Navy Detachment utilizes the CDTF for live agent training and the Bradley Radiological/Laser Laboratory for training in theory and equipment operation for radiological defense. Approximately 500 students graduate annually from the Detachment's courses. In addition to being fully qualified to conduct training using the Army's facilities, the Navy Detachment actively participates as part of the Joint Training Steering Group.

CBR-D training is incorporated into other courses such as the Senior Enlisted DC Program Management and Training, Damage Control Assistant, Repair Party Leader, and Explosive Ordnance Disposal.

#### 5.4.5 Marine Corps NBC Defense Professional Training

The Marine Corps NBC Defense School at Ft. McClellan consists of an Enlisted Basic NBC Defense Course, and a newly developed Officer Basic NBC Defense Course. In addition to the courses conducted by the Marine Corps NBC Defense School, marines attend three other functional courses (Chemical Officer Advanced Course, NBC Reconnaissance Course, and the Radiological Safety Officer Course) conducted by the Army Chemical School.

The USMC Enlisted Basic NBC Defense Course trains approximately 200 NBC specialists in a comprehensive 10 week program covering all the Individual Training Standards specified in MCO 1510.71. The curriculum includes 108 hours of instruction on how to conduct NBC training. This training provides marines with the tools they will need on a daily basis as they perform their primary peacetime mission of conducting NBC Defense training to their units. The course is divided into six blocks of instruction as shown in figure 5-4.

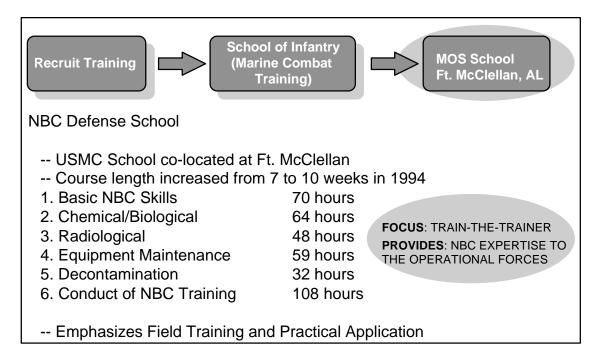


Figure 5-4. USMC Individual Training (Enlisted NBC Specialists)

The USMC Officer Basic NBC Defense Course will be scheduled once a year to coincide with the graduation of newly selected warrant officers from the Warrant Officer Basic Course. The first iteration will be conducted in June 1997. The seven-week course will train about 24 students annually and provide instruction on all officer training standards specified in MCO 1510.71.

#### 5.5 TRAINING IN A TOXIC CHEMICAL ENVIRONMENT

In 1987 the Army established the Chemical Defense Training Facility (CDTF) at Fort McClellan, Alabama. The CDTF allows personnel to train in a real toxic agent environment. Since its opening, the Army has utilized this valuable resource to train over 36,000 US and Allied members from all Services. Training philosophy demands that the military train the way it fights. The CDTF promotes readiness by providing realistic training in the areas of detection, identification, and decontamination of chemical agents. The training develops confidence in chemical defense tactics, techniques, procedures, and chemical defense equipment. Instructors ensure that trainees can adequately perform selected tasks on a chemically contaminated battlefield. To date, the CDTF has maintained a perfect safety and environmental record.

Enrollment at the Joint Senior Leaders Course and the Toxic Agent Leader Training Course at Fort McClellan continues to be in demand. However, due to funding constraints, both of these courses were deleted from course listings during the Training and Doctrine Command FY96 Course Review. The Joint Senior Leader Course continues as an unresourced course and units requesting Toxic Agent Training are accommodated if funding can be arranged. Over 1,200 active and reserve commanders, service leaders, and toxic agent handlers from each of the services have attended. These experts become instructors for the Services for unit training. In

addition to this training opportunity, toxic chemical environment training provides senior officers, commanders and future specialists confidence in their doctrine, warfighting techniques, and the equipment they fight with in the face of challenges presented by NBC contamination. Without this capability, training for all personnel would be theoretical, with no practical experience in a toxic environment.

There is growing international interest in CDTF training participation. Germany has been taking advantage of this training opportunity for about five years. The United Kingdom now uses this facility for training. Law enforcement agencies have also participated in the training.

During FY95, the Base Realignment and Closure Commission (BRAC) placed Ft. McClellan on the base closure list and is planned for closure in FY99. The Chemical School and the CDTF will be closed and new training facilities are planned to be opened at Fort Leonard Wood, Missouri.

#### 5.6 INTEGRATION OF REALISM/WARGAMES/EXERCISES

#### 5.6.1 Simulations and Wargames

Incorporation of NBC features into relevant simulations, including portrayal of NBC weapons effects is essential. Currently, several models which represent the fluid dynamics of NBC contamination are available. However, relatively few robust representations of NBC effects have been fully implemented in wargames and analytical models used by DoD. The Concepts Evaluation Model (CEM), used by the Army Concepts Analysis Agency, captures NBC effects off-line. Corps level models such as Vector-In-Command (VIC) and Division models such as Combined Arms and Support Task Force Evaluation Model (CASTFOREM) have some NBC capabilities and are continually being improved. JANUS, a division level model, has NBC capabilities that are being improved and updated. Force Evaluation Model (FORCEM) has been modified for theater level play. The configuration controlled version of Tactical Warfare (TACWAR) has had within it a chemical module for theater level chemical play that is under examination by the Joint Staff, and OSD for its ability to accurately model the effects of chemicals on a theater level warfight.

Incorporation of WMD features in relevant models, including faithful portrayal of CB aerosolization and electromagnetic pulse (EMP) effects is essential. The incorporation of CB weapons into the base cases of the computer wargame Louisiana Maneuvers (LAM) versions of the combat development and training model Janus-A and the ongoing iteration of the Army's Total Army Analysis (TAA) process using FORCEM, mark the first time major decisions have considered CB weapons as a part of the standard battlefield. For the LAM Janus-A (CB), the next step is to adopt the CB improvements into the Army Standard Janus-A model. This will put CB effects into a widely used training simulation and provide a Janus-A training audience the opportunity to understand the impacts of CB weapons. ACES, an Air Force Command Exercise System is a family of joint wargames which currently has robust nuclear simulations with chemical and biological planned for the near future. All existing models need to be modified in

the biological area. To date, there has been limited model modification for biological play except for the current modifications ongoing to Janus.

Each of the services conducts wargames, which incorporate WMD in the scenarios, in their respective senior level service schools. The Joint Land, Aerospace, and Sea Simulation (JLAS), a joint exercise with all the senior service schools participating, hosted by the Air Force Wargaming Center at Maxwell AFB, Alabama, incorporates electronic simulation of the NBC environment. The Navy has conducted a Naval Battle Analysis to provide a tool to analyze the effects of CB agents on Naval operations and permit the incorporation of realistic assessments of CB warfare effects into Naval wargames. As a result, the Vapor, Liquid, and Solid Tracking (VLSTRACK) Model has been integrated into selected wargames and demonstrated to participants.

The current gaming simulations (*e.g.*, Corps Battle Simulation and Brigade/Battalion Battle Simulation) do not provide commanders and staffs with the tools that will enhance their ability to manage a battle fought under NBC and smoke conditions. The fix for these legacy systems is through upgrades to the existing models, with funds provided by the proponent. The long term correction to this shortfall is the development of the future gaming simulations (Joint Simulation, Warfighter Simulation 2000 and Combined Arms Tactical Trainer). These simulations have a requirement for a very diverse synthetic environment, an absolute must in order to replicate the NBC hazards and smoke conditions of the future battlefield. With the establishment of proper conditions, commanders and staffs can truly comprehend the management problems associated with conducting war in a NBC and smoke environment.

There is currently no standardized instrumentation system (IS) that can realistically portray all facets of Nuclear, Biological and Chemical training to train the total force. The U.S. Army Chemical School is developing NBC Recon training devices for the detection and tracking of simulated NBC contamination at Maneuver Combat Training Centers (CTCs) and home station training areas. Proposed training IS will retrieve, process and calculate digital contamination data for maneuver units, and will also include AAR feedback in the areas of NBC casualties, change of custody, and reaction procedures during NBC attacks and operations. This IS would provide a realistic replication of NBC contamination as portrayed on the Battlefield. Resourcing will be pursued to field proposed training devices at CTCs and other locations.

# 5.6.2 Joint NBC Training/Joint and Combined Exercises

In an effort to improve and add realism to NBC training, the Joint Staff in Joint Pub 3-11, *Joint NBC Defense Doctrine*, formalizes the doctrine for Joint NBC training and exercises. During PF 98 (Mobilization) and PF 99 (Deployment), Atlantic Command (ACOM), in its role as the force provider, ensures that deploying units and personnel are certified as combat ready. The 1996 NIEX tested our nation's ability to respond to a crisis involving biological weapons.

# Chairman of the Joint Chiefs of Staff (CJCS) Exercise Program

Joint NBC defense training objectives have been incorporated into the CJCS Exercise Program. This program includes three different types of exercises

- (1) **Positive Force** (PF) exercises are large scale Command Post Exercises that normally consider national level issues such as mobilization and deployment. During PF 98 (Mobilization) and PF 99 (Deployment), Atlantic Command (ACOM), in its role as the force provider, ensures that deploying units and personnel are certified as combat ready. An integral part of this certification procedure is determining unit, personnel, and equipment operational readiness under NBC conditions.
- (2) **Positive Response** (PR) exercises normally consider strategic nuclear level issues. In addition to considering command and control of nuclear forces, these exercises deploy, and backup national command and control personnel and systems annually. Capabilities of these redundant systems are equally applicable during chemical and biological scenarios as they are during nuclear scenarios.
- (3) The **No-Notice Interoperability Exercise** (NIEX) program continues to focus on our ability to interdict the proliferation of nuclear, chemical, and biological weapons. In 1995, the NIEX required the interagency process to respond to a foreign nation's request to interdict and recover three stolen nuclear weapons. National level forces were deployed in response to this crisis. The 1996 NIEX tested our nation's ability to respond to a crisis involving biological weapons.

#### Army

The Army emphasizes integration of NBC defense training in unit rotations at the Combat Training Centers (CTCs). These centers include the National Training Center (NTC), Joint Readiness Training Center (JRTC), the Combat Maneuver Training Center (CMTC), and the Battle Command Training Program (BCTP).

The Army continues to see positive results in training based on external evaluation of unit Army Training and Evaluation Programs (ARTEPs) conducted at the NTC, JRTC, and other training locations world-wide. These results clearly show and emphasize that through continued training, soldiers can increase their ability to perform combat missions despite degradation caused by wearing a protective ensemble. Units which (1) have the necessary command support and equipment, (2) balance NBC within their overall training requirements, and (3) execute according to approved training plans, perform their overall mission better in a simulated NBC environment. However, increasingly constrained training resources limit training to fundamentals; often this means training for operating in an NBC environment is not funded.

#### Air Force

NBC warfare defense preparedness is an integral part of periodic Operational Readiness Inspections conducted by Major Command Inspectors General. Realism is injected into these scenarios using a simulated wartime environment including the use of bomb simulators, smoke

and attacking aircraft. Personnel are tasked to perform war skills while in their full complement of protective equipment. Additionally, Air Force units participate in major joint and combined exercises which incorporate realistic NBC situations. Following are examples from the Pacific Air Force (PACAF) which describe exercises incorporating NBC situations:

- TEAM SPIRIT Joint/combined large scale air, sea, land exercise to demonstrate US resolve in South Korea.
- ULCHI FOCUS LENS Joint/combined command and control exercise conducted in conjunction with the Republic of Korea's national mobilization exercise "ULCHI."
- FOAL EAGLE Joint/combined rear area battle and special operations field training exercise.

#### Navy

Due to the unique nature of Naval vessels, CBR defense training is conducted similarly whether platforms are operating independently or in a group. Even in a battle group scenario, the task force would still continue with the mission while each unit would conduct NBC defense against certain attacks. Therefore, formal training is conducted by Afloat Training Groups while platforms are operating independently. Required training exercises are conducted by each unit every three months in order to maintain their readiness rating. During scheduled NBC defense training periods, realism is stressed. NBC defense equipment is used extensively. Protective masks and suits are worn by required personnel.

Inter-Deployment Training Cycle (IDTC) are notional cycles which have at lest four full scale CBR-D exercises conducted prior to the predeployment readiness evaluation. Exercises incorporate all personnel and demonstrate all CBR-D equipment. Also, readiness standards require that at least two full-scale graded CBR-D exercises be conducted every six months.

#### Marine Corps

The Marine Corps incorporates NBC training into combined arms exercises at the Marine Corps Air Ground Combat Center in Twenty Nine Palms, California. Battalion level unit exercises are also conducted during Korea and Thailand Incremental Training Programs where units deploy and exercise various tasks. Like the Air Force and Army, the Marine Corps also participated in major joint/combined exercises. The level is determined by mission, threat, and task organization. During FY96, the Marine Corps incorporated NBC defense training into such exercises as JTF Exercise UNITED ENDEAVOR, ULCHI FOCUS LENS96, FOAL EAGLE and IMEFEX 96. It should be noted that all Marine Corps units must also conduct quarterly NBC exercises. Evaluations include operational, administrative, and logistical functional areas. These exercises incorporate realistic NBC defense training into the exercise scenario to enhance the value of the exercise

#### 5.7 INITIATIVES

#### **5.7.1 Joint**

#### **Doctrine**

Initiatives in Joint NBC defense doctrine are detailed in section 5.2.

#### Modeling

The Deputy Assistant Secretary of Defense for Chemical and Biological Matters, DATSD(CBM), and the Deputy Under Secretary of the Army for Operations Research (DUSA-OR) have initiated a CB Modeling Process Action Team whose purpose is to "provide OSD with a consolidated and integrated CB modeling program, where possible, harmonizing individual Service and Agency work into joint programs and eliminating duplication and overlapping projects." We initiated a system to establish configuration control and a model repository and data base through the CB Information Analysis Center. Our goal is to allow all aspects of CB defense to be performed in the Distributive Interactive Simulation (DIS) arena.

In response to a Joint Requirement Oversight Council (JROC) question concerning the impact of weapons of mass destruction (WMD) on medical force structure, the Joint Staff is currently conducting a "Joint WMD Analysis" using the models TACWAR and METRIC to evaluate the effects of chemical and biological agents on theater level warfighters. Among the many issues related to use of WMD, potential casualties of WMD will be used to review medical force structures.

# **Training**

#### 5.7.2 **Army**

In an effort to refine doctrine and training, the Army is quantifying the impact of NBC environments on combat operations. Two programs have been executed to achieve this goal: (1) Combined Arms in a Nuclear/Chemical Environment (CANE), and (2) Physiological and Psychological Effects of the NBC Environment and Sustained Operations on Systems in Combat (P²NBC²). These Force Development Testing and Experimentation (FDTE) evaluations have improved our understanding of individual and unit operations and performance degradation while in Mission Oriented Protective Posture (MOPP). The CANE FDTE evaluations quantified field data that commanders can use for planning, training and decision making to respond to the threat.

The Army, as proponent for CANE tests, has completed five field evaluations (mechanized infantry squad/platoon in 1983, tank company team in 1985, armor heavy battalion task force in 1988, light infantry forces in 1992, and air defense artillery in 1993). The Army has established the CANE Implementation Plan (CIP), a systematic review process to ensure identified deficiencies are addressed and corrected. The Commander of the Army's Training and

Doctrine Command (TRADOC), reviews the CIP annually. Army field manuals are then revised to address deficiencies identified in CANE tests.

Before CANE FDTEs were conducted, commanders' training in a simulated NBC environment had an indication of the degradation that MOPP places on their operations. They were aware that training could maximize proficiency, but they lacked the feedback to direct that training. Consequently, training was often sporadic and incomplete.

The Army is now implementing several training guidance improvements by:

- Providing heightened command emphasis to unit commanders on NBC threat with attention to Third World countries;
- Simulating NBC environments in training;
- Continuing emphasis and effort to integrate safe, realistic NBC defense in all training;
- Extending wear of MOPP gear in basic and annual training.

# 5.7.3 Air Force

The Air Force currently has three training and readiness initiatives underway and continues to improve its professional training.

The Civil Engineer Readiness Technical School implemented an advanced course at the CDTF. The training is scenario driven, versus lockstep, and revolves around a terrorism incident involving chemical munitions. Air Force instructors are qualified to conduct joint classes at the CDTE and are fully integrated into CDTF operations. Readiness personnel lead every Air Force class through the training and also assist the other services with their training requirements.

The school is in the process of revising its courses of instruction in order to meet the requirements of the Specialty Training Standard (STS) approved in October 1996. The new STS requires Readiness personnel be much more qualified in biological warfare operations, to include the use of emerging detection and plotting technologies.

Air Force Readiness personnel in the field who are enrolled in correspondence courses for upgrade training to the five skill level will have the opportunity to elect to receive the course on fully interactive CD-ROM with full motion-video and sound. The course is presently available only in a paperback version, which will continue to remain available after the CD-ROM release. Interactive courseware will begin development in fiscal year 1997.

#### 5.7.4 Navy

The Navy's main initiative is integration of CBR-D requirements in the tactical training strategy. These requirements are executed via the interdeployment training cycle's aggressive training and material readiness program. Additionally, the funds made available from the FY96 National Defense Authorization bill are being utilized to upgrade existing training aids and

delivery of training support ADP equipment to all units. Navy is also investigating required preparations and training associated with large area decontamination. The Naval Facilities Engineering Command is currently conducting a study in this area with the results expected in 2QFY97.

Additionally, the Navy's basic NBC defense course has been incorporated in both officer and enlisted accession training curriculums. In conjunction with this initiative, the same course taught at the fleet training centers has been restructured to improve throughput.

## 5.7.5 Marine Corps

During FY96, the Marine Corps training initiatives centered on the establishment of a Chemical and Biological Incident Response Force (CBIRF) to counter the growing biological and chemical terrorist threat. The CBIRF was activated April 1, 1996 and was deployed to the Olympics in Atlanta during the summer.

# National Asset Activated 1 April 1996

- -- Tests New Equipment, Procedures, and Techniques
- -- Provides Advanced NBC Training to Marine Forces through Mobile Training Teams
- -- Assesses Unit/Facility Vulnerabilities to Enhance Force Protection Planning

# FORCE MULTIPLIER FOR THE MAGTF.

Figure 5-5. Chemical/Biological Incident Response Force (CBIRF) Role in Training

The CBIRF focuses on consequence management to terrorist-initiated NBC incidents. The CBIRF is a national asset, to be globally sourced to Marine Force Commanders and National Command Authority for duties as the President may direct. The CBIRF consists of 380 skilled and trained personnel, including civilian experts. The organization consists of six sections: Command (including a Reach-Back Advisory Group), Security, Service Support, NBC Reconnaissance, Decontamination, and Medical. The CBIRF is equipped with state-of-the-art detection, monitoring, and decontamination equipment and is prepared for operations in a wide range of military-civilian contingencies. The Commanding General, Marine Corps Combat Development Command will continue to develop concepts, doctrine, and tactics, techniques and procedures for this CBIRF. In addition to the CBIRF's capabilities to respond to chem/bio incidents it serves as a training asset to the operational forces. The CBIRF will provide mobile training teams to various units to provide advanced NBC training to unit NBC specialists (trainthe-trainer). This will provide operational forces with the most up-to-date NBC techniques, tactics, and procedures developed by the CBIRF. CBIRF will also conduct Unit/Facilities Vulnerability Assessments to enhance force protection. The bottom line is that the CBIRF will serve as a force multiplier to the MAGTF.

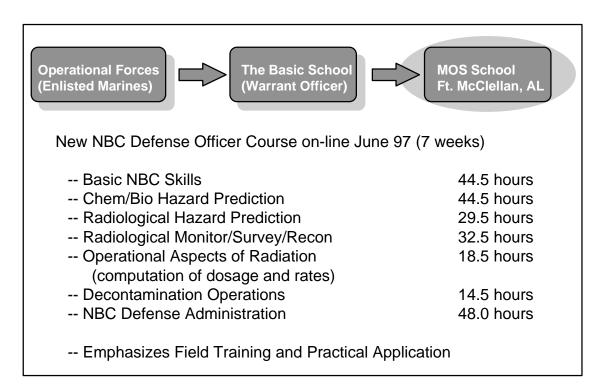


Figure 5-6. USMC Individual Training (NBC Officer Training)

NBC OFFICER TRAINING. Establishment of a Marine Corps Basic NBC Officer Course is complete. This course provides the requisite NBC skills to newly selected Marine Corps NBC Defense Officers. The first course will begin in June 1997. All Marine NBC Officers are Warrant Officers, usually selected from NBC Defense specialist enlisted ranks. As Warrant Officers, they focus entirely on technical expertise, NBC Defense training, and supervision of enlisted NBC Defense specialists. In the past, Warrant Officers relied on the training they had received as enlisted NBC Defense Specialists and on-the-job training. However, the new NBC Defense Officers Course will be geared specifically towards Warrant Officers and will build on previous training received.

NBC Officers also attend the Army's Chemical Officer Advanced Course and Joint NBC courses as part of advanced Military Occupational Specialist (MOS) training.

Marine Corps initiatives for FY97 will include:

- Integration of NBC defense procedures in Mission Oriented Tasks (Garrison and Field).
- Review MCO 1510.71, Marine Corps NBC Specialist Individual Training Standards (ITS).
- Conduct NBC Defense Course Content Reviews based on revise ITS's and emerging NBC equipment requirements.
- Conduct Table of Equipment and Table of Organization Reviews.
- Complete implementation of an NBC Staff Planning follow-on course, a training course to prepare NBC defense officers and NCOs to assist in the staff planning process.

- Establishment of combat training package for ISMs for reserve forces and follow-on forces in the event of hostilities involving an NBC threat.
- Conduct 2d Annual Joint Marine Corps and Navy shipboard decontamination exercises with 7th Fleet.
- Continue participation in a bilateral exchange program with the Republic of Korea (ROK) Chemical Corps.

#### 5.8 READINESS REPORTING SYSTEM

CJCS MOP 11, the policy document for the Status of Resources and Training System (SORTS) requires units from all Services to independently assess their equipment on hand and training status for operations in a chemical and biological environment. This is a change to previous SORTS reporting requirements, and provides more visibility to NBC defense related issues.

The Services individually monitor their SORTS data to determine the type of equipment and training needing attention. Units routinely report their equipment on hand and training status for operations in a chemical or biological environment. Commanders combine this information with other factors, including wartime mission, to provide an overall assessment of a unit's readiness to go to war.

Additionally, the Commanders-in-Chief (CINCs) of the Unified Commands submit readiness assessments at each Joint Monthly Readiness Review (JMRR). In the JMRR, CINCs assess the readiness and capabilities of their command to integrate and synchronize forces in executing assigned missions. As needed, CINCs address NBC defense readiness and deficiencies as part of the JMRR.

#### 5.9 NBC DEFENSE TRAINING AND READINESS ASSESSMENT

> DoD lacks a mechanism to provide adequate information on the current status of training, equipment, and readiness. It needs adequate information to assess operational force capabilities from the Department and the warfighting CINCs' perspectives.

**SOLUTION:** Assign consistent and higher priority to NBC defense, especially by the Joint Chiefs of Staff and the warfighting CINCs, in order to maintain an adequate state of readiness and to ensure NBC defense reporting information is accomplished in a timely and adequate manner. Existing reporting systems may provide an adequate mechanism for assessing readiness.

> Joint NBC defense doctrine needs to be continually developed and include joint tactics, techniques, and procedures.

**SOLUTION:** Initiatives began in 1987 to develop joint NBC defense doctrine which resulted in Joint Pub 3-11, *Joint Doctrine for Nuclear, Biological, and Chemical (NBC) Defense.* In FY95 efforts were initiated to update this document. The Joint Service Integration Group, assisted by the U.S. Army Chemical School Joint Doctrine Cell, is responsible for assisting the U.S. Army in the development of this doctrine under sponsorship of the Joint Staff. Continued Service interaction and cooperation facilitated by these organizations will produce the next generation of Joint NBC Defense Doctrine.

> There are limited chemical and biological features in wargaming and planning models.

**SOLUTION:** Funding to add chemical and biological warfare to exercise scenarios has been received for FY96. Efforts are underway in the current DoD programming cycle to establish long term support. The CB Modeling Process Action Team is also addressing this issue.